



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,353	09/05/2003	Percy Hegcr	A35976	7817
21003	7590	02/07/2006	EXAMINER	
BAKER & BOTTS 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			CHEN, KIN CHAN	
			ART UNIT	PAPER NUMBER
			1765	
DATE MAILED: 02/07/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/656,353	HEGER ET AL.	
	Examiner	Art Unit	
	Kin-Chan Chen	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-9 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 13, 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Koemtzopoulos et al. (US 6,017,414; hereinafter "Koemtzopoulos").

In a method of detecting and controlling the cleaning of the processing chambers that are used for etching process, Koemtzopoulos teaches that a DC bias voltage of a plasma generator may be monitored during a cleaning etching process. The DC bias voltage may be measured between ground and an electrode (so-called decoupling electrode) of the plasma generator disposed within the processing chamber (col. 3, lines 8-14). The DC bias voltage may be compared to a predetermined value representing a clean processing chamber. The plasma cleaning etching process may be terminated when the DC bias voltage reaches the predetermined value. When the process is terminated, it is expected that the supply of process gases is to be disconnected and the plasma generator is to be deactivated. Koemtzopoulos also teaches DC bias voltage is measured continuously and at discrete intervals. The DC voltage profile (or a plurality of DC voltage profiles) of a plasma cleaning etching process may be stored. The stored DC voltage profile may be compared with a predetermined value representing a clean processing chamber (**specifically, col. 6, lines 21-30**). The comparison performed for the same process gases and process parameters is expected. See col. 3, lines 8-14, 50-57, col. 6, lines 11-33; col. 7, lines 4-19; col. 8, lines 29-47.

Koemtzopoulos illustrates some examples of the results in Figs. 2 and 3. Significantly, Koemtzopoulos discloses that the bias voltage is considered to be stabilized when reaching a local **maximum** (col. 6, lines 25-27).

Application claims are to be given their broadest reasonable interpretation consistent with the specification. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983).

As to claim 10, Koemtzopoulos teaches that the termination of the cleaning etching process may be delayed for a selected time after the DC bias voltage reaches the predetermined value (col. 7, lines 55-60).

Response to Arguments

4. Applicant's arguments with respect to claims 1-3 and 10 filed January have been fully considered but they are not persuasive.

Applicant has argued that Koemtzopoulos does not teach that the measured profile has a maximum in the voltage profile at the end point. It is not persuasive. As has been stated in the office action, Koemtzopoulos illustrates some examples of the results in Figs. 2 and 3. Significantly, Koemtzopoulos discloses that the bias voltage is considered to be stabilized when reaching a local **maximum** (col. 6, lines 25-27).

Applicant has argued that Koemtzopoulos does not teach comparing the DC bias voltage to a predetermined value representing a clean processing chamber. It is not persuasive. As has been stated in the office action, Koemtzopoulos teaches that the stored DC voltage profile may be compared with a predetermined value representing a clean processing chamber (**specifically, col. 6, lines 21-30**).

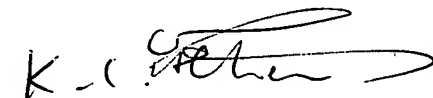
Allowable Subject Matter

5. Claims 4-9 are allowed.

Art Unit: 1765

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 2, 2006



Kin-Chan Chen
Primary Examiner
Art Unit 1765